

Instruction for use

Radiant warmer

CERAMOTHERM 1000



D2027_02

CERAMOTHERM

☐ **WY1100/** _____

☐ **WY1200/** _____

Year of manufacture _____

Software

1.43

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*Application to babies and defenseless persons under surveillance only

Normal use

The radiant warmer CERAMOTHERM 1000 is used to maintain the body temperature of patients, especially infants and children, during postnatal care, baby changing, examination, treatment and care as well as for pre-warming of patient beds. It is suitable for continuous operation and complies with the "Particular requirements for the safety of infant radiant warmers EN 60601-2-21".

General safety instructions

The user must be thoroughly acquainted with this instruction for use. The radiant warmer must be used under medical supervision by qualified persons only who are acquainted with the use and risks of infra-red radiant warmers.

In order to ascertain the safe operation of the infant radiant warmer, we recommend an inspection by qualified persons once per year.

In order to maintain the nominal state on occasion of the yearly inspection we also recommend a preventive maintenance by qualified persons.

We can only be held responsible for the safety features of this device when maintenance is carried out by qualified persons, by observing our instructions and by using original spare parts.

Transport and storage

For transport and storage the following conditions should be observed:

Temperature:	0 to 70°C
Relative air humidity:	15 to 95 %
Atmospheric pressure:	210 to 1100 hPa

The radiant warmer must not be exposed to strong vibrations.

Ambient requirements

The radiant warmer can be used under the following operation conditions:

Temperature:	18 to 30°C
Relative air humidity:	15 to 95 %
Atmospheric pressure:	860 to 1100 hPa

This radiant warmer is not suitable for the use in explosion-hazardous areas.

Mounting / Installation

Depending on the supplied model the radiant warmer CERAMOTHERM 1000 can be mounted at the wall or ceiling by qualified persons by observing our instructions for installation. The radiant warmer can also be mounted at a mobile stand. Please refer to the remarks for the individual mounts on pages 12 to 15 and 21 to 24.

For installation it has to be considered that heating or air conditioning devices can change the effect of the radiant warmer. Therefore a distance of 1 m should be kept clear. This distance should also be kept between two radiant warmers. Furthermore the radiant warmer should not be placed in draughts, at cold walls or windows as well in direct sunlight.

In case of radiant warmers with flexible arrangement to the patient pad take care that no items are placed within the adjusting/moving radius of the radiant warmer.

No fluids must be placed above the radiant warmer which in the case of fault might flow into the device.

For fire prevention a distance of min. 50 cm must be kept clear between the radiant warmer and any inflammable material (e.g. curtains), under consideration of the moving radius of the radiant warmer in case of an adjustable mount.

The radiant warmer provides an electronic control which allows to exactly select the radiation intensity emitted to the patient pad. The selection is decisively dependent from the distance between the radiant warmer and the patient pad. Therefore the mounting height must be determined with corresponding care.

The factory distance calibration is obvious from the sticker which is placed between the rear faceplate and the device housing. If the radiant warmer shall be mounted at a different distance, this should only be done with the consent of the manufacturer or authorized supplier because in that case the device must be recalibrated to the new distance.

For ergonomical reasons different standard respectively operating distances apply for the various mounts. The corresponding distance as well as the weights and torques can be taken from the charts below the individual mounts, pages 21 to 24.

A safety distance of 650 mm between the bottom line of the radiant warmer and the patient pad must be maintained. Height-adjustable wall and ceiling mounted radiant warmers must be mounted in a way that at highest patient level and lowest position of the radiant warmer a safety distance of 650 mm is maintained.

When calculating the mounting height the standard respectively operating distance plus the thickness of the pad must be considered in order to verify the correct distance to the patient.

A direct installation to the electrical mains must only be done by a qualified electrician.

Structure and operating principle

The radiant warmer is used for pre-warming the patient pad and for maintaining the patient's body temperature during the treatment. It generates infra-red radiation energy which is absorbed by the skin and converted into body heat. The radiation spectrum is in the far non visible infra-red range. The radiation energy does not injure the patient's eyes.

The ceramic heating elements do not scale and are not affected by liquid splashes.

For dazzle-free illumination of the patient pad two light sources are integrated in the radiant warmer.

The radiation intensity emitted to the patient pad is selected defined in mW/cm^2 . The selection is permanently displayed. System faults and power failure are alerted visually and audibly.

The intensity display of the radiant warmer does not give any indication as to the patient's body temperature. Therefore the patient's temperature must be checked in regular intervals or monitored.

Under certain circumstances radiation intensity above $10 \text{ mW}/\text{cm}^2$ may bring an infant in a hyperthermic condition. Therefore after 15 minutes the intensity is automatically reduced to a safe value while a visual and audible alarm is released. The operator may now reduce the intensity selection or confirm the high intensity by pushbutton for the next 15 minutes. For certain applications this safety function can be switched-off temporarily by a conscious action, refer to chapter "Function processes and alarms" (page 8) and "Use" (page 11).

Start-up

Qualified persons only should install and start-up the device and instruct the user's personnel.

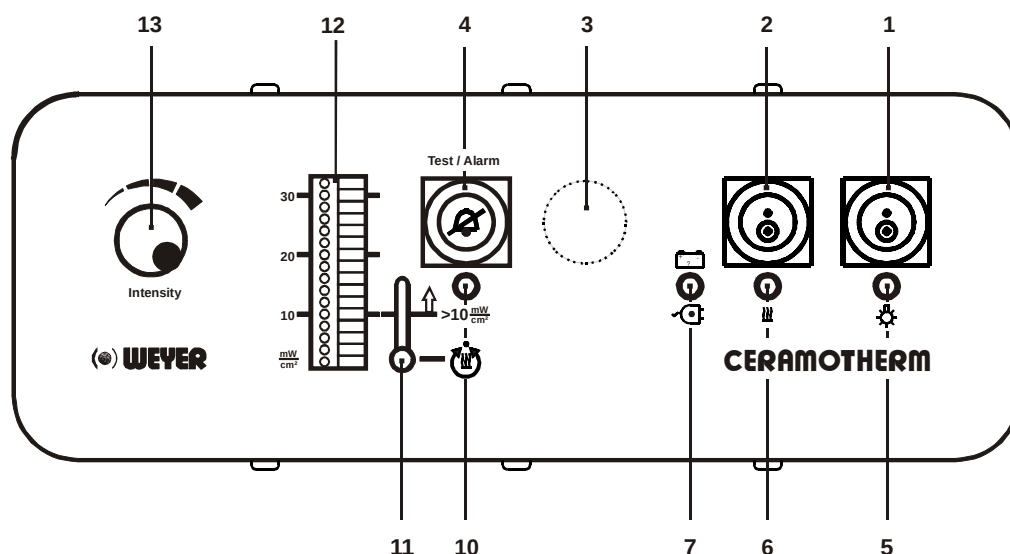
Before start-up, the device as well as the mount must be checked for correct and secure position. Check also the function of the adjusting elements (if available) according to chapter "Mounts" (pages 12 to 15).

The radiant warmer must be equipped with a 9V battery which is included in the delivery of the device. The battery compartment is placed at the bottom side of the warmer, beside the nameplate.

Now clean the device in cold condition according to chapter "Cleaning and disinfection" (page 17).

Before switching-on the radiant warmer make yourself acquainted with the following control elements and displays.

Functions



- 1 Button illumination On / Off.
- 2 Button heating On / Off.
- 3 Label next maintenance.
- 4 Alarm reset button:
 - a.) By pushing the button the audible alarm of the safety function $>10 \text{ mW/cm}^2$ is reset and the radiant warmer proceeds heating at the selected intensity for further 15 minutes.
 - b.) By pushing the button for approx. 3 seconds the safety function $>10 \text{ mW/cm}^2$ is switched-off which is confirmed by two short tones and the yellow warning lamp (10) flashes. The safety function is reactivated by pushing the button again for approx. 3 seconds which is confirmed by one short tone.
- 5 Pilot lamp (green) illumination.
- 6 Pilot lamp (green) heating power.
- 7 Warning lamp (red):
 - a.) Flashing during normal operation: The battery capacity for the power failure alarm is below 10 minutes.
 - b.) Lighting in connection with a permanent alarm tone: Power failure. The power line of the radiant warmer is interrupted. The alarm can be reset by switching-off the heating (2). When the power line has been reinstalled, the heating must be switched on again.
- 8 Idle
- 9 Idle
- 10 Warning lamp (yellow) $>10 \text{ mW/cm}^2$:
 - a.) Lighting: Intensity selection above 10 mW/cm^2 . Increased attention must be given to the patient. After 15 minutes the radiation intensity is automatically reduced to 10 mW/cm^2 .
 - b.) Flashing: The safety function $>10 \text{ mW/cm}^2$ has been switched-off and the radiant warmer permanently generates the selected radiation intensity. The patient temperature must be securely surveyed.
- 11 Pilot lamp (green) heating power. Lighting when heating power is available. When the lamp lights, the radiant warmer will heat-up, when it does not light, the radiant warmer will cool-off.
- 12 Intensity selection display: LED-spot field.
- 13 Intensity selection knob with 15 increments.

First switch-on

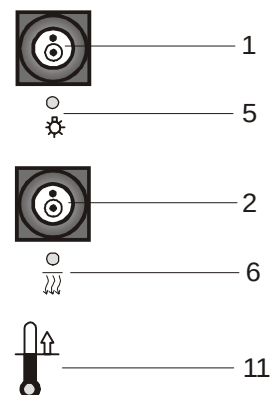
First of all make sure that the radiant warmer is connected to the power supply. The pilot lamp for the safety cut-off at the bottom side of the device indicates the readiness for operation.

Switch-on the light with button (1). The green pilot lamp (5) and the illumination of the patient area light.

Switch-on the heating with button (2). The green pilot lamp (6) lights. A self-test is performed. A tone sounds and all displays light-up for 2 seconds.

Check during the 2 seconds whether all displays light up and the tone sounds.

When the self-test is finished successfully, the radiant warmer starts heating-up. The green pilot lamp for heating power (11) lights.



Select an intensity of 10 mW/cm² with knob (13). The selection is indicated as LED-spot in display (12).

The green pilot lamp for the heating power (11) flashes according to the intensity selection, i.e.:

- Low radiation intensity = short flashes
- High radiation intensity = long flashes.

Depending on the ambient temperature the ceramic heating elements require approx. 4 to 6 minutes until the selected intensity of 10 mW/cm² is reached.

Function processes and alarms

Heating-up

After switch-on with button (2) the device starts heating. The desired radiation intensity can be selected with knob (13) and is indicated as LED spot in display (12). Depending on the selection and the ambient temperature the heating-up time will be between 3 and 15 minutes.

Normal operation up to 10 mW/cm²

Radiation intensity up to 10 mW/cm² cannot cause any problems and under normal conditions it is sufficient to maintain the body temperature of healthy normal-weight infants.

Increasing the radiation intensity

By turning the knob (13) clockwise the radiation intensity is increased. Each selection increment is confirmed by a short tone. The intensity selection is indicated as LED spot in display (12).

Maximum intensity

Depending on the device model and the calibrated distance to the patient pad a maximum intensity of 14 to 30 mW/cm² can be selected. In case of a selection which the radiant warmer is unable to reach, the maximum intensity is indicated by a permanent LED spot in the intensity selection display (12). The un-reachable selection is indicated by a flashing LED spot.

Operation above 10 mW/cm² with safety function

Under certain circumstances radiation intensity above 10 mW/cm² may bring an infant in a hyperthermic condition. An intensity selection above 10 mW/cm² is indicated by warning lamp (10). After 15 minutes the intensity is automatically reduced to 10 mW/cm². When the high intensity shall be continued, this must be confirmed by pushbutton (4).

Alarm:

In the intensity selection display (12) the LED spot for the selection and the LED spot for 10 mW/cm² flash alternately and a short alarm tone sounds in intervals of 2 seconds. The alarm can be reset for 15 minutes by pushbutton (4). Now the radiant warmer will emit the selected intensity for further 15 minutes. The yellow warning lamp (10) lights and indicates that the safety function >10 mW/cm² is activated.

Operation above 10 mW/cm² without safety function

Provided that the patient's temperature is surveyed, the safety function can be switched-off temporarily by pushing the button (4) for approx. 3 seconds. A special warning is expressed regarding the danger of hyperthermia in case of operation at an intensity above 10 mW/cm²!

Alarm:

The switch-off of the safety function with button (4) is confirmed by two short tones and the warning lamp (10) flashes.

The reactivation with button (4) is confirmed by one short tone. The warning lamp (10) lights in case of an intensity selection above 10 mW/cm².

When the radiant warmer is switched-on anew, the safety function is always activated.

Reducing the radiation intensity

By turning the knob (13) anti-clockwise the radiation intensity is reduced. Each selection increment is confirmed by a short tone. The intensity selection is indicated as LED spot in display (12). Depending on the amount of intensity reduction the cooling-off will take 1 to 4 minutes.

End of operation

Switch-off the heating with button (2). The pilot lamp for the safety cut-off at the bottom side of the device lights.

Use

Warnings for use

General

- The radiant warmer is not suitable for the use in explosion-hazardous areas.
- The ambient conditions for the radiant warmer must in no case be influenced by any warming or air condition devices.
- Do not place any medical drugs or infusion fluid above the radiant warmer or within irradiated area.
- Do not place anything on top of the radiant warmer.

Adjustment

- Take care that no items are placed within the adjusting/moving radius of the radiant warmer.
- The mobile stand (if available) must be moved in lowest position only.
- When using height-adjustable radiant warmers a safety distance of 650 mm to the patient pad must be maintained.
- Height-adjustable radiant warmers must be applied to babies and defenseless persons under surveillance only.

Infra-red radiation

- Under unfavourable circumstances the safety guard of the radiant warmer can reach a temperature of above 85°C. Therefore during operation it should be avoided to touch the safety guard or the top of the radiant warmer. Take care that infants or children cannot grip into the safety guard.
- Do not place any dark metal items within the field of radiation, as after a longer period they can become dangerously hot.
- The intensity display of the radiant warmer does not give any indication as to the patient's temperature.
- The patient's temperature must be checked in regular intervals or monitored.
- Sunlight, draught, cold walls and windows in direct ambience to the radiant warmer will influence the patient's temperature balance negatively.
- Below a distance of 650 mm to the patient pad there is a danger of hypothermia or burning injuries for the patient.
- When a radiant warmer is used in connection with a phototherapy device, it must be observed that patient temperature and humidity loss can increase.
- The intensity display (12) refers to the patient pad. The radiation intensity reaching the patient's skin is approx. 4 mW/cm² higher than the displayed value because the distance of the radiant warmer to the patient's body surface is approx. 10 cm shorter than to the patient pad.
- Under certain circumstances radiation intensity above 10 mW/cm² may bring an infant in a hyperthermic condition.
- Under radiant warmers the trans-epidermal humidity loss in patients can increase unconsciously.

Fire hazard

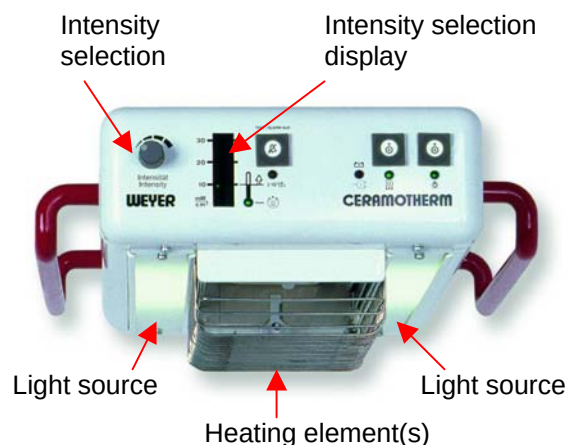
- Never use the radiant warmer together with inflammable anaesthesia gas or other inflammable material and (cleaning) fluids as e.g. alcohol, ether etc.
- Never cover the radiant warmer as long as it is warm as this would impair the convection.

Radiant warmer

The radiant warmer generates a long-wave radiant heat. The radiation intensity effective to the patient is selected at the display unit of the device.

For dazzle-free illumination of the patient area two light sources are integrated in the radiant warmer which can be switched-on at the display unit, if necessary.

Under unfavourable circumstances the safety guard of the radiant warmer can reach a temperature of above 85°C. Therefore during operation it should be avoided to touch the safety guard or the top of the radiant warmer. Take care that infants or children cannot grip into the safety guard.

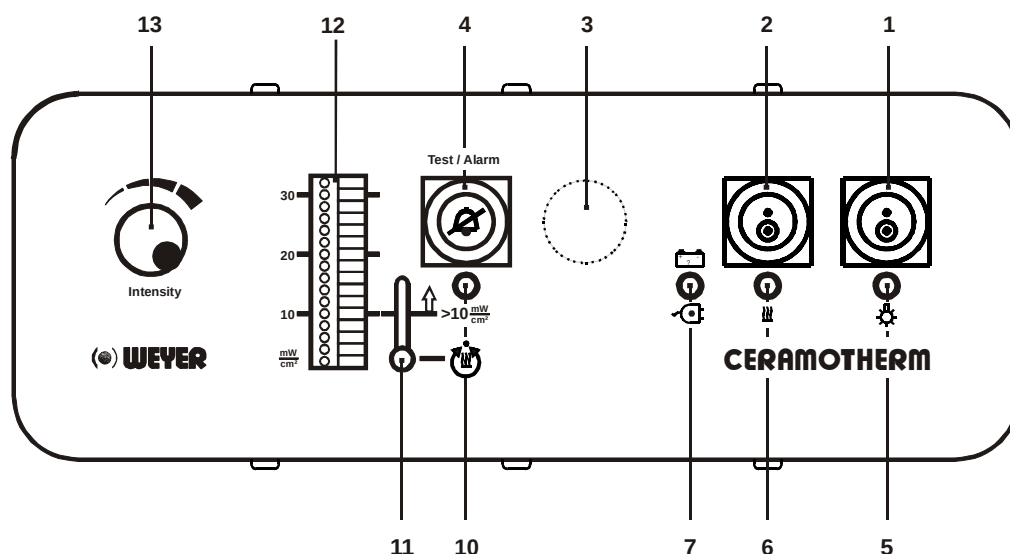


A safety distance of 650 mm between the bottom line of the radiant warmer and the patient pad must be maintained.

In case of radiant warmers with adjustable mount (refer pages 12 to 15 and 22 to 24) unfasten the fixing facility and move the radiant warmer into the desired position. Use the two handles and do not touch the safety guard. Afterwards fasten the fixing facility again.

Take care that no items are placed within the adjusting/moving radius of the radiant warmer.

Intensity selection



After switch-on the heating with button (2), the desired radiation intensity can be selected with knob (13). The selection is indicated as LED-spot in display (12). Now it takes about 3 to 15 minutes until the selected intensity is reached.

The intensity selection is mainly dependent from the baby's respectively the patient's weight, age, maturity, the anamnesis as well as the ambient conditions. When the radiant warmer is used for long-term care, the radiation intensity has to be selected with utmost care.

- The smaller and immature the infant, the higher is the heat demand.
- The lower the ambient temperature, the higher is the heat demand.

If there is no experience regarding the intensity selection, for an unclothed infant 10 mW/cm² should be selected initially. The body temperature must be checked in regular intervals. If necessary, the intensity selection must be adjusted according to the measured patient temperature.

The intensity selection is ideal when neutral thermal conditions are available, i.e. when the patient's body core temperature in relaxed condition is between 36.7 and 37.3°C.

Under certain circumstances radiation intensity above 10 mW/cm² may bring an infant in a hyperthermic condition. Therefore the radiant warmer provides the following automatic safety function which is indicated by the yellow warning lamp (10):

When radiation intensity above 10 mW/cm² is emitted to the patient pad for more than 15 minutes, the radiation intensity is automatically reduced to 10 mW/cm² and an alarm is released.

In the intensity selection display (12) the LED spot for the selection and the LED spot for 10 mW/cm² flash alternately and a short alarm tone sounds in intervals of 2 seconds. Check the patient's temperature and reduce the intensity selection if necessary. When the patient shall stay under the radiant warmer at an intensity selection above 10 mW/cm², push button (4). Now the alarm is reset and the radiant warmer will emit the selected intensity for further 15 minutes. The yellow warning lamp (10) lights and indicates that the safety function >10 mW/cm² is activated.

The intensity selection refers to the patient pad. The radiation intensity reaching the patient's skin is approx. 4 mW/cm² higher than the selected value because the distance of the radiant warmer to the patient's body surface is approx. 10 cm shorter than to the patient pad.

When the patient shall stay under the radiant warmer for longer time at an intensity above 10 mW/cm² it is recommendable to survey the body temperature, e.g. with temperature monitor APGAR DIGITEMP order No. WY1004. In that case the safety function >10 mW/cm² can be switched-off temporarily by a conscious action. Push button (4) for approx. 3 seconds until two short tones sound and the warning lamp (10) flashes.

When the safety function >10 mW/cm² shall be reactivated, push button (4) again for approx. 3 seconds until one short tone sounds. The warning lamp (10) stops flashing. It lights when in case of intensity selection >10 mW/cm² the safety function >10 mW/cm² is switched-on.

When the radiant warmer is switched-on anew, the safety function is always activated.

Maximum intensity

Depending on the device model and the calibrated distance to the patient pad a maximum intensity of 14 to 30 mW/cm² can be selected. (refer to "Technical Data", page 20, as well as the data under the individual mounts, pages 21 to 24).

In case of a selection which the radiant warmer is unable to reach, the maximum intensity is indicated by a permanent LED spot in display (12). The unreachable selection is indicated by a flashing LED spot. In that case reduce the intensity selection to the reachable value by turning the knob (13) anti-clockwise.

Mounts

Static arrangement to the patient pad

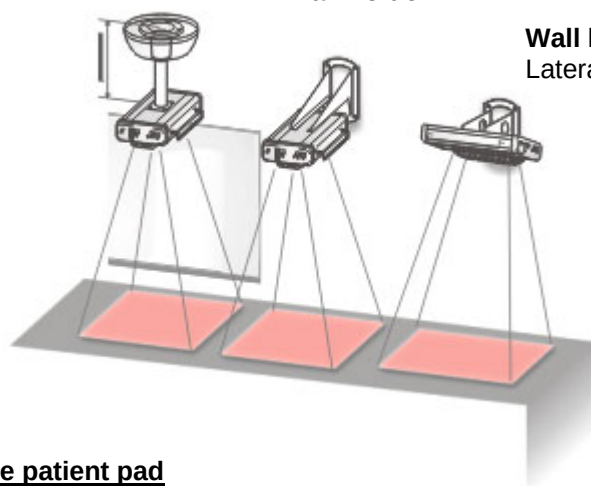
Ceiling mount

Distance between patient pad and bottom line of solid ceiling max. 2600 mm.

Wall holder

Wall holder

Lateral mounting



Flexible arrangement to the patient pad

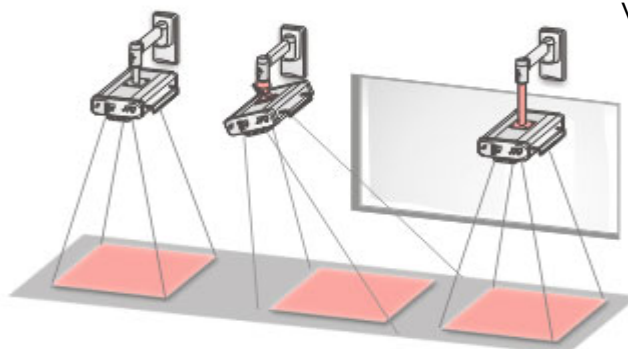
Wall arm 320 mm, 480 mm or 600 mm long

Fixed distance to the patient pad.

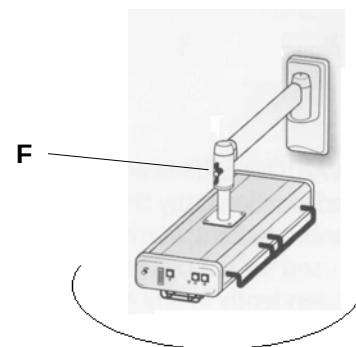
Horizontal swiveling 180° with fixing facility, rotation of warmer 360°.

Upgrade option:
Vertical
adjustment $\pm 45^\circ$

Upgrade option:
Vertical extension 250 mm

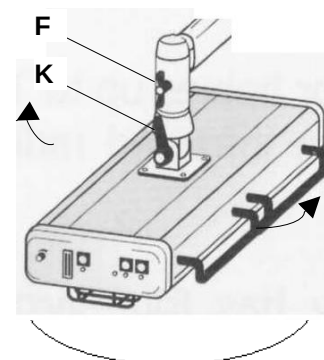


Unfasten the fixing facility (**F**) by anti-clockwise turning. Rotate respectively swivel the warmer to the desired position. Use the two handles and do not touch the safety guard. Take care that the wall arm will not clash with other devices in the ambience, as e.g. ceiling lights, mobile stands, etc. Then fasten the fixing facility again by clockwise turning.



When **supplementary option vertical adjustment $\pm 45^\circ$** is available:

When the radiation shall be focussed to the patient in diagonal instead of vertical direction, unfasten the release handle (**H**) by anti-clockwise turning and adjust the warmer to the desired direction. Afterwards fasten the release handle again by clockwise turning.



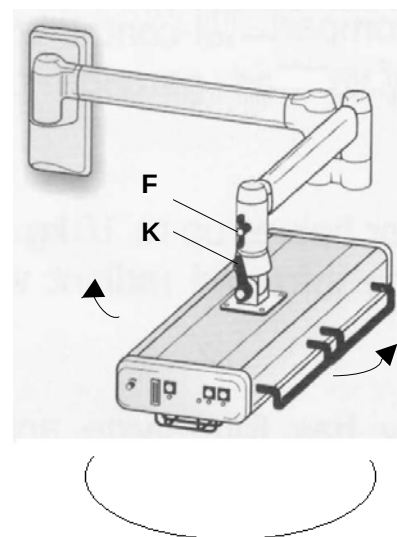
Double-joint wall arm

Fixed distance to the patient level.

Horizontal swiveling 180° with fixing facility,
rotation of warmer 360° , vertical adjustment $\pm 45^\circ$.

Unfasten the fixing facility (**F**) by anti-clockwise turning. Rotate respectively swivel the warmer to the desired position. Use the two handles and do not touch the safety guard. Take care that the wall arm and the extension will not clash with other devices in the ambience, as e.g. ceiling lights, mobile stands, etc. Afterwards fasten the fixing facility again by clockwise turning.

When the radiation shall be focussed to the patient in diagonal instead of vertical direction, unfasten the release handle (**H**) by anti-clockwise turning and adjust the warmer to the desired direction. Afterwards fasten the release handle again by clockwise turning.



Height-adjustable mounts

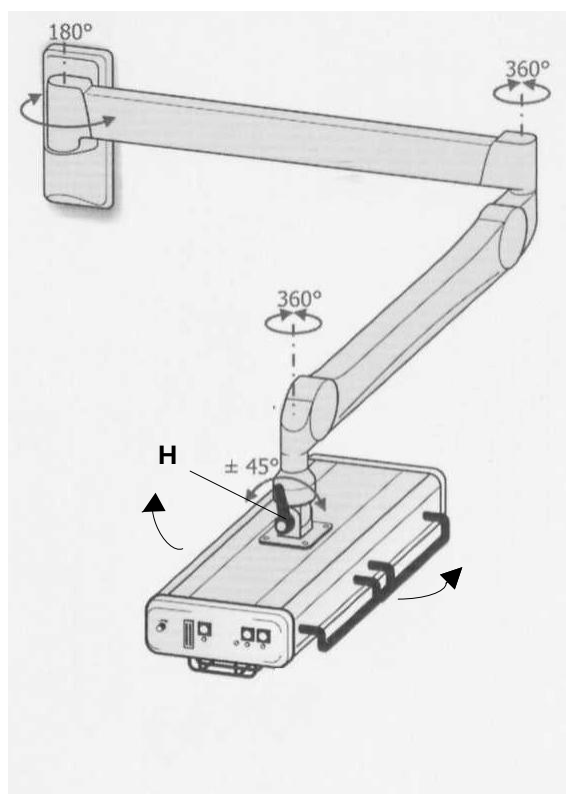
Application to babies and defenseless persons under surveillance only!

The safety distance of 650 mm between the bottom line of the radiant warmer and the patient pad must be maintained. If necessary it must be secured in a mechanical way, i.e. by a stop in the height-adjustable spring-balanced arm.

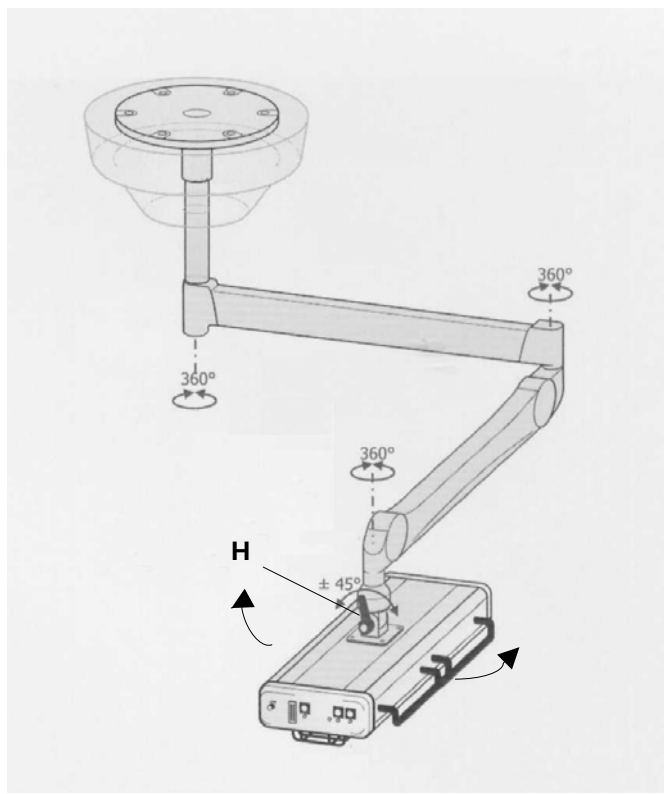
Double-joint arm

Adjustable distance to the patient pad.

Horizontal swiveling 180° (wall arm) respectively 360° (ceiling arm), adjustable stop for highest position, rotation of warmer 360°, vertical adjustment $\pm 45^\circ$.



Double-joint wall arm



Double-joint ceiling arm

Rotate respectively swivel the warmer to the desired position. Use the two handles and do not touch the safety guard. Take care that wall or ceiling arm extensions will not clash with other devices in the ambience, as e.g. ceiling lights, mobile stands, etc.

When the radiation shall be focussed to the patient in diagonal instead of vertical direction, unfasten the release handle (H) by anti-clockwise turning and adjust the warmer to the desired direction. Afterwards fasten the release handle again by clockwise turning.

Mobile radiant warmers

Application to babies and defenseless persons under surveillance only!

Height-adjustable mobile stand,
4 anti-static castors, 2 with kickstop,
rotation of warmer 360°, vertical adjustment $\pm 45^\circ$.

Unfasten the knob of the height-adjustment (1) by anti-clockwise turning and adjust the stand to the lowest position. Fasten the knob again by clockwise turning.

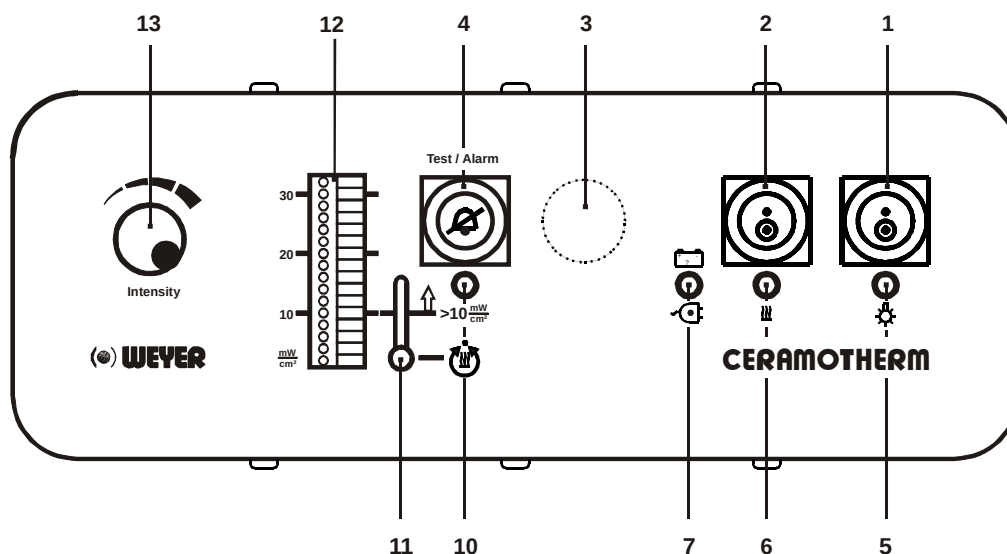
Release the kickstop of the castors, move the device to the desired position and brake the castors again. The device must be moved in lowest position only.

The radiant warmer is calibrated to a distance of **650 mm (safety distance)** to the patient pad. Now adjust the height in a way that the **red distance mark (2)** is at the level of the patient pad. Take care that the knob of the height-adjustment (1) is fastened again by clockwise turning.

Rotate respectively swivel the warmer to the desired position. Use the two handles and do not touch the safety guard. When the radiation shall be focussed to the patient in diagonal instead of vertical direction, unfasten the release handle (H) by anti-clockwise turning and adjust the warmer to the desired direction. Afterwards fasten the release handle again by clockwise turning.



Safety and alarm functions



Display / Lamps	Alarm tone	Cause / Effect	Measure
(7) flashing	Short tone every 10 seconds	Battery capacity not sufficient for power failure alarm. Audible alarm not secured for 10 minutes.	Replace battery (9V-E Block) at the bottom side of the radiant warmer.
(7) lighting, remaining displays are off	Permanent, non-resettable	Power failure Power plug disconnected inconsciously or any other interruption in the power supply. No heating, patient becomes hypothermic.	Switch-off the radiant warmer with button (2). Make sure that the patient is cared for in another way. Check the power supply and the fuses.
(10) lighting	No alarm tone	Intensity selection above 10 mW/cm². Safety function >10 mW/cm² is activated.	Watch the patient's temperature.
LED's for 10 mW/cm² and for the intensity selection flash alternately.	Intermittent 1 : 2	Radiation intensity above 10 mW/cm² High intensity for more than 15 minutes. Alarm and automatic intensity reduction. May bring an infant in a hyperthermic condition.	Check the patient's temperature. Reduce the intensity selection if necessary or push button (4). The alarm is reset and the radiant warmer will emit the selected intensity for further 15 minutes.

Cleaning and disinfection

The radiant warmer should be cleaned and disinfected for every new patient, however, at least once per week.

Cleaning agents and disinfectants

Never use inflammable disinfectants!

Do not use scouring cleaning agents. Use only disinfectants on the basis of aldehydes and quaternary ammonium merges. Unsuitable are tincture of iodine 5 %, carbolic acid, spirit, ether, acetone and other alcoholic agents as well as disinfectants on the basis of halogen-splitting merges, strong organic acids and oxygen-splitting merges.

When choosing a substance generally the manufacturer's recommendations must be observed. The manufacturer of the substance is hold liable for the application field and possible material damages.

The following disinfectants can be recommended:

Incidur®	Henkel Hygiene, Düsseldorf / Germany
Gevisol	Schülke & Mayr, Norderstedt / Germany
Buraton 10F	Schülke & Mayr, Norderstedt / Germany
Bacillotox	Bode, Hamburg / Germany

Cleaning and disinfecting

After use switch-off the radiant warmer and wait until it has cooled-off. Disconnect the power plug.

Clean the device with a cloth slightly saturated with cleaning agent and wipe it dry.

No liquid must enter into the top of the device housing.

The ceramic heating elements must not be treated with cleaning agents or disinfectants!

After disinfection let the radiant warmer dry for at least 1 hour. Do **not** switch it on in order to accelerate the drying process.

After cleaning and disinfection check the functions.

Waste disposal

Fluorescent tubes:	Hazardous waste.
Batteries:	Hazardous waste.

Maintenance

Nomenclature

Qualified person	= Skilled worker, engineer, bio-medical engineer, with corresponding qualification.
Authorized qualified person	= Qualified person, who has acquainted special knowledge of a certain product.
Inspection	= Ascertainment of the actual state.
Preventive maintenance	= Measures to maintain the nominal state.
Repair	= Measures to restore the nominal state.
Maintenance	= Inspection, preventive maintenance, repair.

In order to ascertain the safe operation of the infant radiant warmer CERAMOTHERM 1000, we recommend an inspection by qualified persons once per year which include the following checks:

- *Verification that the actual use is in conformance with the normal use.*
- *General condition of the device.*
- *Secure position of the mounts.*
- *Function and secure fixing of the adjusting facility (if available).*
- *Possible damages at the device, mounts or power cord.*
- *Functions of the device and safety provisions.*
- *Measurement of the electrical safety according to the national standards.*

The battery securing the power failure alarm should be changed by qualified persons once per year, however, at the latest when the warning lamp (7) flashes during operation. The battery compartment is placed at the bottom side of the radiant warmer, beside the nameplate.

In order to maintain the nominal state on occasion of the yearly inspection we also recommend a preventive maintenance by qualified persons which additionally includes the following:

- *Check of interior wiring, connections and heating elements.*
- *Check of all safety relevant parameters according to IEC 601-2 and EN-60601-2-21.*

We can only be held responsible for the safety features of this device when maintenance is carried out by qualified persons, by observing our instructions and by using original spare parts.

Devices respectively device components have to be cleaned and disinfected prior to each maintenance measure or when they are sent out to our factory for repair.

Spare and wear parts

Order No.	Description
EH0227	11 W fluorescent tube (CERAMOTHERM 1100)
EH0218	Fluorescent tube 18 W (CERAMOTHERM 1200)
EG0002	Battery 9 V energy block

Technical Data

Transport and storage

Temperature	0 to 70°C
Relative air humidity	15 to 95 %
Atmospheric pressure	210 to 1100 hPa

The radiant warmer must not be exposed to strong vibrations.

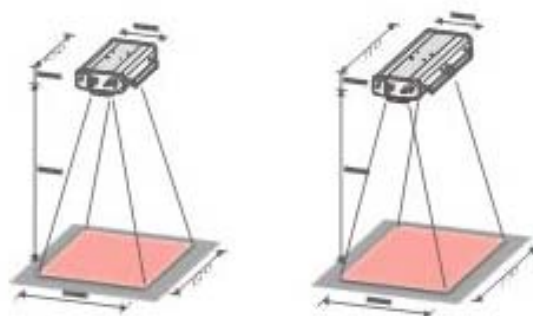
Ambient requirements

Temperature	18 to 30°C
Relative air humidity	15 to 95%
Atmospheric pressure	860 to 1100 hPa

The radiant warmer is not suitable for the use in explosion-hazardous areas.

General data

	WY1100	WY1200
	without mount	
Dimensions		
Depth	450 mm	710 mm
Width	220 mm	220 mm
Height	100 mm	100 mm
Weight	5.8 kg	8.2 kg



Operating / Performance data

Operating voltage / power supply	~ 230 V / 50 Hz
Wave length spectrum	1500 to 6800 nm
Standard distance to patient pad:	
Wall mounts, static and swiveling	900 mm
Ceiling mount, static	900 mm
Wall- or ceiling mounts, height-adjustable	800 mm (operating distance)
Mobile stand, height-adjustable	650 mm
Safety distance to the patient pad	650 mm
Factory calibration of distance possible	650 to 900 mm
Increments of intensity selection	2 mW/cm ²
Intensity selection display	LED-spot field 2 to 30 mW/cm ²
Resolution of the intensity selection display	2 mW/cm ² per LED field
Safety function (alarm / automatic intensity reduction)	After 15 minutes above 10 mW/cm ²
Heating-up period from 24°C ambient temperature to max. intensity selection	Approx. 15 minutes

	CERAMOTHERM 1100	CERAMOTHERM 1200
Max. power input	690 W / 3 A	900 W / 3,9 A
Heating element(s), ceramic	1 x 600 W	2 x 400 W each
Intensity selection / irradiated area at distance to patient pad:		
650 mm	2-28 mW/cm ² / 390 x 520 mm	2-30 mW/cm ² / 390 x 680 mm
700 mm	2-24 mW/cm ² / 430 x 540 mm	2-30 mW/cm ² / 430 x 700 mm
750 mm	2-20 mW/cm ² / 460 x 560 mm	2-26 mW/cm ² / 460 x 720 mm
800 mm	2-18 mW/cm ² / 480 x 580 mm	2-22 mW/cm ² / 480 x 730 mm
850 mm	2-16 mW/cm ² / 500 x 600 mm	2-20 mW/cm ² / 500 x 750 mm
900 mm	2-14 mW/cm ² / 520 x 620 mm	2-18 mW/cm ² / 520 x 770 mm
Illumination	2 fluorescent tubes 11 Watt each	2 fluorescent tubes 18 Watt each

Classification

Protection class	1
Device type	B
MDD class	Ila

Standards

The device complies with	EN 60601(edition 1996)
	EN 60601-2-21, 1995-12 resp. modification A1 1998-0

Certification

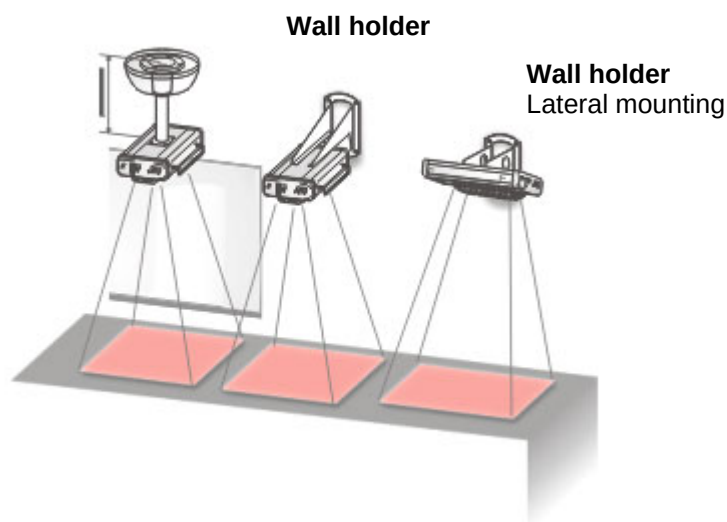


Mounts

Static arrangement to the patient pad

Ceiling mount

Distance between patient pad and bottom line of solid ceiling max. 2600 mm.



Standard distance to the patient pad: 900 mm

	CERAMOTHERM 1100	CERAMOTHERM 1200
Ceiling mount	Order No. WY1117	Order No. WY1217
Wall holder	Order No. WY1115	-
Wall holder, lateral mounting	Order No. WY1116	Order No. WY1216

Weight with mount / torque		
Ceiling mount	13.3 kg / -	15.7 / -
Wall holder	7.9 kg / 19 Nm	-
Wall holder, lateral mounting	7.3 kg / 13 Nm	9.7 / 18 Nm
Intensity selection / irradiated area at standard distance	2 to 14 mW/cm ² / 520 x 620 mm	2 to 18 mW/cm ² / 520 x 770 mm

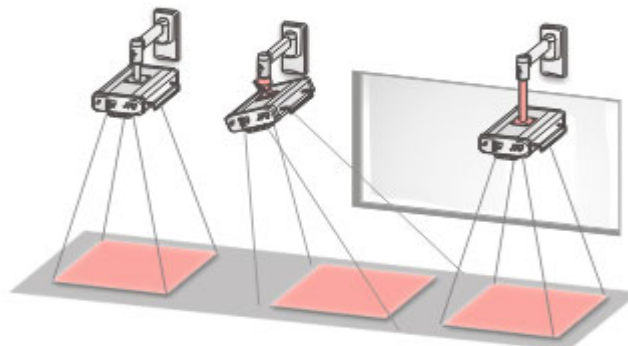
Flexible arrangement to the patient pad

Wall arm 320 mm, 480 mm or 600 mm long.

Fixed distance to the patient pad.
Horizontal swiveling 180° with fixing facility,
rotation of warmer 360°.

Upgrade option:
Vertical
adjustment $\pm 45^\circ$

Upgrade option:
Vertical extension 250 mm



Standard distance to the patient pad: 900 mm

	CERAMOTHERM 1100	CERAMOTHERM 1200
Wall arm 320 mm	Order No. WY1101	Order No. WY1201 (lateral mount)
Wall arm 480 mm	Order No. WY1102	Order No. WY1202
Wall arm 600 mm	Order No. WY1103	Order No. WY1203

Supplementary options:	
Vertical adjustment $\pm 45^\circ$	Order No. WY1822
Vertical extension 250 mm	Order No. WY1846

Weight with mount / torque:		
Wall arm 320 mm	9.8 kg / 31 Nm	12.3 / 41 Nm
Wall arm 480 mm	10.2 kg / 44 Nm	12.6 / 58 Nm
Wall arm 600 mm	10.4 kg / 54 Nm	12.8 / 71 Nm
Intensity selection / irradiated area at standard distance	2 to 14 mW/cm ² / 520 x 620 mm	2 to 18 mW/cm ² / 520 x 770 mm

Double-joint wall arm

Fixed distance to the patient pad.
Horizontal swiveling 180° with fixing facility,
rotation of warmer 360°, vertical adjustment $\pm 45^\circ$.



Standard distance to the patient pad: 900 mm

	CERAMOTHERM 1100	CERAMOTHERM 1200
Double-joint wall arm R1 = 480 mm, R2 = 480 mm	Order No. WY1104	Order No. WY1204
Special length R1 = 320 or 600 mm	Upon request	Upon request
Special length R2 = 320 or 600 mm	Upon request	Upon request
Weight with wall arm / torque	13.7 kg / 100 Nm	16.2 / 125 Nm
Intensity selection / irradiated area at standard distance	2 to 14 mW/cm ² / 520 x 620 mm	2 to 18 mW/cm ² / 520 x 770 mm

Height-adjustable mounts

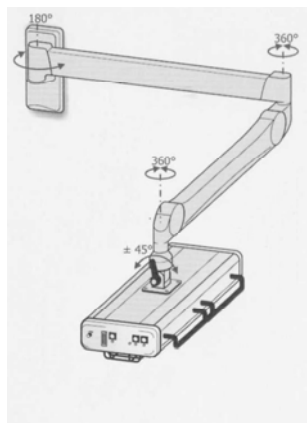
Application to babies and defenseless persons under surveillance only!

The safety distance of 650 mm between the bottom line of the radiant warmer and the patient pad must be maintained. If necessary it must be secured in a mechanical way, i.e. by a stop in the height-adjustable spring-balanced arm.

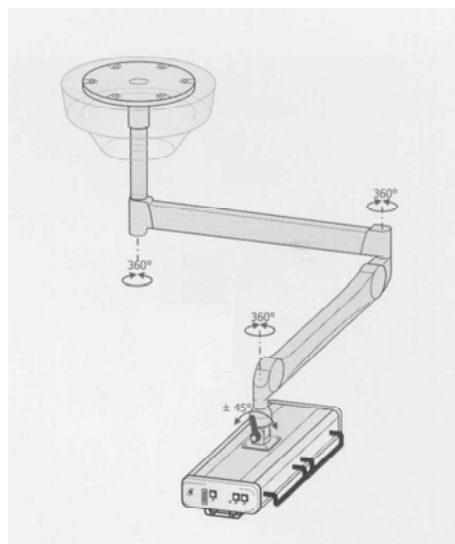
Double-joint arm

Adjustable distance to the patient pad.

Horizontal swiveling 180° (wall arm) respectively 360° (ceiling arm), adjustable stop for highest position, rotation of warmer 360°, vertical adjustment $\pm 45^\circ$.



Double-joint wall arm,
Extension arm R1 = 750 mm, height-
adjustable spring balanced arm R2 = 800 mm.



Double-joint ceiling arm,
Extension arm R1 = 750 mm, height-adjustable
spring balanced arm R2 = 800 mm.
Mounting at the solid ceiling.

Operating distance to patient pad: 800 mm

Safety distance to the patient pad: 650 mm

	CERAMOTHERM 1100	CERAMOTHERM 1200
Double-joint-wall arm R1 = 750 mm, R2 = 800 mm Special length R1 = 950 mm	Order No. WY1107	Order No. WY1207
	Order No. WY1847	Order No. WY1847
Double-joint ceiling arm R1 = 750 mm, R2 = 800 mm Distance between patient pad and bottom line of solid ceiling 1800 to 2600 mm	Order No. WY1108	Order No. WY1208
Double-joint ceiling arm R1 = 750 mm, R2 = 800 mm Distance between patient pad and bottom line of solid ceiling above 2600 mm	Order No. WY1118	Order No. WY1218
Special length R1 = 950 mm	Order No. WY1848	Order No. WY1848
Weight with wall arm respectively ceiling mount / torque:		
Double-joint-wall arm	18.7 kg / 197 Nm	21.2 kg / 236 Nm
Double-joint-ceiling arm Distance between patient pad and bottom line of solid ceiling 1800 to 2600 mm	28.4 kg / 186 Nm	30.9 kg / 223 Nm
Double-joint-ceiling arm Distance between patient pad and bottom line of solid ceiling above 2600 mm	38.0 kg / 186 Nm	40.0 kg / 223 Nm
Intensity selection / irradiated area at operating distance	2 to 18 mW/cm ² / 480 x 580 mm	2 to 22 mW/cm ² / 480 x 730 mm

Mobile radiant warmers

Application to babies and defenseless persons under surveillance only!

Height-adjustable mobile stand,
4 anti-static castors, 2 of them with kickstop,
rotation of warmer 360°, vertical adjustment $\pm 45^\circ$.

Distance mark securing the **safety distance** to the patient pad.



Standard distance to the patient pad: 650 mm
Safety distance to the patient pad: 650 mm

	CERAMOTHERM 1100	CERAMOTHERM 1200
Height-adjustable mobile stand	Order No. WY1112	Order No. WY1212
Weight with mobile stand	22.3 kg	24.7 kg
Intensity selection / irradiated area at operating distance	2 to 28 mW/cm ² / 390 x 520 mm	2 to 30 mW/cm ² / 390 x 680 mm

Technical data mobile stand

Depth	560 mm
Width	560 mm
Overall height	1535 to 1935 mm
Necessary underpin height	> 95 mm
Castors	4 x Ø 52 mm (2 with kickstop)
Adjustable to patient level	600 to 1000 mm

EG-Konformitätserklärung
EC Declaration of Conformity
DECLARATION DE CONFORMITE CE

Wir · We · NOUS SOUSSIGNÉS,



Herrenhöhe 4 · D-51515 Kürten-Herweg,
Deutschland · Germany · ALLEMAGNE

erklären in alleiniger Verantwortung, dass das Medizinprodukt
declare under our sole responsibility that the medical device
DECLARONS SOUS NOTRE ENTIERE RESPONSABILITE QUE LE DISPOSITIF MEDICAL

Wärmegerät Strahlung · Radiant warmer · RAMPE CHAUFFANTE

CERAMOTHERM 1000

Klasse · Class · Classe **II a**

entsprechend den Vorgaben der Richtlinie 93/42 EWG Anhang II, Artikel 3, vollständiges
Qualitätssicherungssystem, unter Registrierungs Nr.: HD 60004903 0001, gefertigt wird.

*is manufactured in accordance with the requirements specified in MDD 93/42 EEC, Appendix II,
Section 3, full Quality Assurance system, under Registration No. HD 60004903 0001.*

A ETE FABRIQUE CONFORMEMENT AUX EXIGENCES SPECIFIEES DANS LA DIRECTIVE 93/42/CEE
ANNEXE II, ARTICLE 3, SYSTEME COMPLET D'ASSURANCE QUALITE, SOUS LE
N° D'ENREGISTREMENT HD 60004903 0001.

Angewandte harmonisierte Normen:

Applied harmonised standards:

NORMES HARMONISEES APPLIQUEES:

DIN EN 60 601-1: 1996

EN 60 601-1-2: 2001

EN 60 601-2-21:1994 + /A1: 1996

Das Produkt trägt das unten aufgeführte Zeichen von:

The Product bears the below mentioned CE- mark by

LE PRODUIT PORTE LE SIGLE INDIQUE CI-DESSOUS

TÜV- Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln.



Kürten, 24.08.2007

Ort und Datum
Place and date
LIEU ET DATE


Geschäftsführung
General Management
DIRECTION


Qualitätssicherung
Quality Assurance
ASSURANCE QUALITE